



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,830	04/09/2004	Bradford C. Stahl	4556	1397
7590 01/11/2006				
Robert Charles Hill 235 Montgomery Street #821 San Francisco, CA 94104		EXAMINER VERDIER, CHRISTOPHER M		
		ART UNIT PAPER NUMBER 3745		
DATE MAILED: 01/11/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/821,830

Applicant(s)

STAHL, BRADFORD C.

Examiner

Christopher Verdier

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 is/are allowed.
- 6) ☒ Claim(s) 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Art Unit: 3745

Applicant's Amendment dated October 14, 2005 has been carefully considered but is non-persuasive. Claims 1-8 are pending, with claims 7-8 being newly presented. The specification has been amended to correct the informalities and inaccuracies set forth in the first Office action. Claim 2 has been amended to correct the informality set forth in the first Office action. Claims 1-6 have been amended to overcome the rejections under 35 USC 112, second paragraph. Correction of the above matters is noted with appreciation.

With regard to the rejection of claim 6 under 35 USC 103(a) as being unpatentable over Rodskier 5,423,701 in view of Stahl 4,930,987, Applicant has argued that claim 6 is not obvious in view of these references, because one is not permitted within the framework of Section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art, that there must be some suggestion or motivation found in the art to make the combination or modification, that it is insufficient to establish obviousness that the separate elements of the invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the elements, that the fact that references can be modified or combined is insufficient to meet this criterion, that the fact that the modification or combination would be well within the ordinary skill in the art, by itself, is insufficient to meet this criterion, and that the examiner needs to show the additional step of how this knowledge of the skilled artisan leads to the suggestion or motivation. Applicant has further argued that the motivation to combine these references in any manner is not present in the text of

Art Unit: 3745

the references even though Stahl issued five years before Rodskier, because Rodskier does not teach anything about replaceable blades.

These arguments are not persuasive, because in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the previous Office action clearly sets forth that the motivation for the combination of references is taught by Stahl, who shows the propeller having a front center hub 14 that has a first set of propeller blade receptacles 26, with a first set of replaceable propeller blades 36 with plug-in bases 38 that slip into and interlock with corresponding slots 28, 30 in the front center hub, with a first set of chambers 40 disposed in the bases of the first set of replaceable propeller blades for receiving exhaust gases from an engine associated with a driveshaft 4, and for conducting the exhaust gases aft, for the purpose of providing a low cost propeller with individually replaceable blades and allowing exhaust gas venting from the engine through the blade bases. Column 1, lines 56-61, column 2, lines 5-12, column 2, lines 31-35, column 3, lines 63-68, column 4, lines 1-3, for example, of Stahl expressly contain such motivation. To summarize, these portions state that a low-cost alternative propeller is provided with individually replaceable blades in the event one of the blades is

Art Unit: 3745

damaged, rather than requiring replacement of the entire propeller assembly, and state that the exhaust exits the propeller from the engine through the blade bases.

Note that the cited references or prior art do not specifically have to suggest making the proposed combination of references (*B.F. Goodrich Co. v. Aircraft Braking Systems Corp.*, 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir 1996); *In re Nilsen*, 851 F. 2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988)). Instead, obviousness may be established by what the combined teachings of the references would have suggested to those of ordinary skill in the art (*In re Young*, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); *Cable Electric Products v. Genmark, Inc.*, 770 F.2d 1016, 1025, 226 USPQ 87 (Fed. Cir. 1985); *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981)). In the instant case, the combined teachings of Rodskier and Stahl clearly suggest to replace the front center hub 8 and propeller blades 6 and the rear center hub 9 and propeller blades 7 of Rodskier, each with the propeller of Stahl, for the purpose of providing a low cost propeller with individually replaceable blades, and allowing exhaust gas venting from the engine through the blade bases. Finally, as more specifically stated by the court in *Keller*, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, nor is it that the claimed invention must be expressly suggested in one or all of the references, but rather the test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

Art Unit: 3745

In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

Claim Objections

Claims 7-8 are objected to because of the following informalities: Appropriate correction is required.

In claim 7, line 3, "blades" should be changed to -- blade --.

In claim 7, line 8, -- first -- should be inserted after "a".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodskier 5,423,701 in view of Stahl 4,930,987. Rodskier discloses a modular counter rotating propeller system substantially as claimed, comprising a front center hub 8 for mounting on a rotating engine driveshaft 2, a rear center hub 9 for mounting on a counter-rotating engine driveshaft 3 coaxial to the rotating engine driveshaft and aft of the front center hub, a first set of propeller

Art Unit: 3745

blades 6 associated with the front center hub, a second set of propeller blades 7 associated with the rear center hub, with a first set of chambers 16 disposed in the front center hub for receiving exhaust gases from an engine associated with the rotating and counter-rotating engine driveshafts, and for conducting the exhaust gases aft, and a second set of chambers 16' disposed in the rear center hub for receiving exhaust gases from the first set of chambers, and for conducting the exhaust gases out aft.

However, Rodskier does not disclose that the front center hub has a first set of propeller blade receptacles, with the rear center hub having a second set of propeller blade receptacles, with a first set of replaceable propeller blades with plug-in bases that slip into and interlock with corresponding slots in the front center hub, and a second set of replaceable propeller blades with plug-in bases that slip into and interlock with corresponding slots in the rear center hub, with a first set of chambers disposed in the bases of the first set of replaceable propeller blades for receiving exhaust gases from the engine associated with the rotating and counter-rotating driveshafts, and for conducting the exhaust gases aft, and a second set of chambers disposed in the bases of the second set of replaceable propeller blades for receiving exhaust gases from the first set of chambers, and for conducting the exhaust gases aft.

Stahl shows a propeller having a front center hub 14 that has a first set of propeller blade receptacles 26, with a first set of replaceable propeller blades 36 with plug-in bases 38 that slip into and interlock with corresponding slots 28, 30 in the front center hub, with a first set of chambers 40 disposed in the bases of the first set of replaceable propeller blades for receiving

Art Unit: 3745

exhaust gases from an engine associated with a driveshaft 4, and for conducting the exhaust gases aft, for the purpose of providing a low cost propeller with individually replaceable blades, and allowing exhaust gas venting from the engine through the blade bases.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to replace the front center hub 8 and propeller blades 6 and the rear center hub 9 and propeller blades 7 of Rodskier, each with the propeller of Stahl, for the purpose of providing a low cost propeller with individually replaceable blades, and allowing exhaust gas venting from the engine through the blade bases.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodskier 5,423,701 in view of Stahl 4,930,987 and Takayama 5,989,664. Rodskier discloses a modular counter rotating propeller system substantially as claimed, comprising a front center hub 8 in the form of a core for mounting on a rotating engine driveshaft 2, a rear center hub 9 in the form of a core for mounting on a counter-rotating engine driveshaft 3 coaxial to the rotating engine driveshaft and aft of the front center hub, a first set of propeller blades 6 associated with the front center hub, a second set of propeller blades 7 associated with the rear center hub, with a first set of chambers 16 disposed in the front center hub for receiving exhaust gases from an engine associated with the rotating and counter-rotating engine driveshafts, and for conducting the exhaust gases aft, and a second set of chambers 16' disposed in the rear center hub for receiving exhaust gases from the first set of chambers, and for conducting the exhaust gases out aft.

However, Rodskier does not disclose that the front center hub has a first set of propeller blade receptacles, with the rear center hub having a second set of propeller blade receptacles, with a first set of replaceable propeller blades with plug-in bases that slip into and interlock with corresponding slots in the front center hub, and a second set of replaceable propeller blades with plug-in bases that slip into and interlock with corresponding slots in the rear center hub, with a first set of chambers disposed in the bases of the first set of replaceable propeller blades for receiving exhaust gases from the engine associated with the rotating and counter-rotating driveshafts, and for conducting the exhaust gases aft, and a second set of chambers disposed in the bases of the second set of replaceable propeller blades for receiving exhaust gases from the first set of chambers, and for conducting the exhaust gases aft. Additionally, Rodskier does not disclose that the front center hub core and the rear center hub core are each encapsulated with fiber-reinforced composite polymer.

Stahl shows a propeller having a front center hub 14 in the form of a core that has a first set of propeller blade receptacles 26, with a first set of replaceable propeller blades 36 with plug-in bases 38 that slip into and interlock with corresponding slots 28, 30 in the front center hub, with a first set of chambers 40 disposed in the bases of the first set of replaceable propeller blades for receiving exhaust gases from an engine associated with a driveshaft 4, and for conducting the exhaust gases aft, for the purpose of providing a low cost propeller with individually replaceable blades, and allowing exhaust gas venting from the engine through the blade bases.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to replace the front center hub 8 and propeller blades 6 and the rear center hub 9 and propeller blades 7 of Rodskier, each with the propeller of Stahl, for the purpose of providing a low cost propeller with individually replaceable blades, and allowing exhaust gas venting from the engine through the blade bases.

The modified propeller system of Rodskier shows all of the claimed subject matter except for the front center hub core and the rear center hub core each being encapsulated with fiber-reinforced composite polymer.

Takayama (figure 7 and column 1, lines 43-50 and column 7, lines 19-59) shows a pump impeller having an unnumbered hub core, which is surrounded/encapsulated by a fiber-reinforced plastic composite polymer, for the purpose of providing a light weight and high strength impeller with excellent vibration suppression and noise shielding ability. Takayama is from the analogous art of pump impellers, and one of ordinary skill in the art would have reasonably looked to the pump impeller art in order to solve the problem of providing a light weight and high strength impeller with excellent vibration suppression and noise shielding ability, because pump impellers are analogous to marine propellers in that pump impellers and marine propellers both rotate and experience the need for vibration suppression and noise shielding.

Art Unit: 3745

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the modified propeller system of Rodskier such that the front center hub core and the rear center hub core each being encapsulated with fiber-reinforced composite polymer, as taught by Takayama.

Allowable Subject Matter

Claims 1-5 are allowed.

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 3745


however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.
January 6, 2006


Christopher Verdier
Primary Examiner
Art Unit 3745